

U.S. Department of Transportation

National Highway Traffic Safety Administration

# **ODI RESUME**

**Investigation:** PE 15-027 **Date Opened:** 07/13/2015

Investigator: Sharon Yukevich Approver: Otto Matheke

**Subject:** Air Bag Inflator Rupture

Reviewer: Scott Yon

### MANUFACTURER & PRODUCT INFORMATION

Manufacturer: ARC Automotive, Inc.

Products: ARC hybrid air bag inflators

**Population:** 490,000 (Estimated)

Problem Description: The driver inflator may rupture during frontal air bag deployment resulting in metal

fragments being propelled into the passenger compartment.

### **FAILURE REPORT SUMMARY**

ODI	Manufacturer	Total
1	TBD	TBD
0	TBD	TBD
2	TBD	TBD
2	TBD	TBD
0	TBD	TBD
0	TBD	TBD
1	TBD	TBD
	1 0 2 2	1 TBD 0 TBD 2 TBD 2 TBD 0 TBD 0 TBD 0 TBD

\*Description of Other: 2014 injury incident reported by Kia Motors.

## **ACTION / SUMMARY INFORMATION**

Action: Open this Preliminary Evaluation (PE)

### Summary:

In December of 2014 the Office of Defects Investigation (ODI) received a complaint of a 2009 incident involving a driver's side air bag inflator rupture in a model year (MY) 2002 Chrysler Town and Country minivan (VOQ 10667409). ODI contacted Fiat Chrysler Automobiles (FCA) and conducted a search for similar incidents and, based on information obtained from FCA and the results of the search, concluded that the 2009 incident was a single isolated event. In June of 2015, Kia notified ODI of a lawsuit alleging driver side inflator rupture in a MY 2004 Kia Optima. ODI investigation revealed that both the 2009 and 2014 incidents involved an inflator supplied by ARC Automotive.

ODI discussed these incidents with ARC Automotive, Inc. (ARC), the manufacturer of the inflator. ARC manufactures inflators that other companies use in air bag modules that are then sold to vehicle manufacturers. The inflator in question is a hybrid design which relies on two distinct sources of energy. The inflator fills the air bag cushion by releasing an inert gas stored in the inflator at high pressure. This gas mixture is augmented by an ammonium nitrate based propellant. Based on information provided to ODI by ARC, the pressurized gas mixture and propellant are contained entirely within a hermetically sealed steel housing and is therefore isolated from external atmospheric conditions. The ARC hybrid inflators are manufactured in both single stage and dual stage designs.

The incident involving the 2002 Chrysler Town and Country occurred in Ohio and involved an air bag module produced by Key Safety Systems that had a dual stage ARC inflator. Preliminary analysis indicates that the exhaust path for the inflation gas mixture may have been blocked by an object of indeterminate origin. This blockage appears to have caused high internal pressure and subsequent rupture of the inflator assembly. ODI's present understanding

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is that this incident is the only known inflator rupture involving the ARC inflator in an FCA vehicle. The incident involving the 2004 Kia Optima occurred in New Mexico. The air bag module in question was manufactured by Delphi and had a single stage ARC inflator. The root cause of the rupture is presently unknown. Presently, this is the only known incident involving the subject inflator in a Kia vehicle.

The affected population consists of approximately 420,000 MY 2002 Chrysler Town and Country and 70,000 MY 2004 Kia Optima vehicles.

At the present time it is unknown if there is a common root cause in these incidents. ODI is opening this investigation in order to collect all known facts from the involved suppliers and vehicle manufacturers.

The ODI report cited above can be reviewed online at http://www-odi.nhtsa.dot.gov/owners/SearchNHTSAID under the following identification number: 10667409

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